10/550182 Docket No.: HO-P02774US1

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AMENDMENTS TO THE CLAIMS

 (Currently amended) A collection of one or more microfluidic devices which together carry a plurality of microchannel structures (101a-h) each of which comprises a reaction microcavity (104a-h) in which there is a solid phase with an immobilized affinity ligand L,

characterized in thatwherein:

- (i) the plurality comprises two or more different sets of microchannel structures, and
- (ii) the affinity ligand L is directed to the same counterpart (binder, B) independent of set, and
- (iii) the sets differ with respect to
 - a) the capacity for binder B per reaction microcavity and/or the capacity per unit volume of the solid phase in a reaction microcavity, and/or
 - b) the base matrix of the solid phase

between the sets but are equal within each set.

- (Currently amended) The collection according to claim 1, eharacterized in that wherein
 the difference is with a factor ≥ 1.2 for at least one of the sets of the collection compared
 to the binding capacity for the set having the lowest binding capacity.
- (Currently amended) The collection according to any of claims 1-2, eharacterized in that wherein at least one of said devices comprises
 - a) at least two of said sets of microchannel structures, and/or
 - b) only one set of microchannel structures, with the proviso that the collection comprises two or more devices which are different with respect to the kind of sets they carry.

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4. (Currently amended) The collection according to any of claims 1-3 being intended for separately performing one or more affinity protocols that differ with respect to the

reactants involved and/or the order of addition of the reactants and/or the concentration

range in which the reactants are used, each of said different protocols utilizing an affinity

reaction between

(i) a solute S, and

(ii) a conjugate comprising

(a) a binder B, and

(b) an affinity counterpart AC_S to the solute S,

eharacterized in that wherein the affinity constant K_{L-B} for formation of the complex L-B between the affinity ligand L and the binder B, i.e. $K_{L-B} = [L][B]/[L-B]$, is at most 10^3 times, such as at most 10^2 times, the corresponding affinity constant for streptavidin and biotin.

- (Currently amended) The collection according to claim 4, eharacterized in that wherein
 L is selected amongst biotin-binding compounds and streptavidin-binding compounds,
 respectively, or vice versa.
- 6. (Currently amended) The collection of any of claims 4-5, characterized in that wherein L has two or more binding sites for B.
- 7. (Currently amended) The collection according to any of claims 1-6, characterized whereinin
 - (a) that each set on a device is grouped into one or more groups of fluidly equivalent microchannel structures, and
 - (b) that each group is located to a particular subarea of the device.
- 8. (Currently amended) The collection according to any of claims 1-7, eharacterized in that wherein said reaction microcavity (104a-h) in at least one, preferably all, of said

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microchannel structures (101a-h) in the upstream direction is connected to a volume-metering unit (106a-h,108a-h).

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- 9. (Currently amended) The collection according to claim 7, eharacterized in that wherein said volume-metering unit (106a-h,108a-h) is part of an inlet arrangement (102,103a-h) for liquid.
- 10. (Currently amended) The collection according to each of claims 6-8, wherein eharacterized in that said volume-metering unit (106a-h,108a-h) within at least one of said group(s) (100) are part of a distribution manifold for distributing liquid to the reaction microcavities (104a-h) of the group, with the proviso that each of said at least one group (100) comprises two or more microchannel structures (101a-h).
- 11. (Currently amended) The collection according to each of claims 7-10, wherein eharacterized in that the inner wall of each of said volume-metering units (106a-h,108a-h) have a sufficient hydrophilicity for said unit to filled by capillarity once an aqueous liquid have entered the unit, and b) a valve (109a-h,110a-h) at its outlet end, for instance a passive valve.
- 12. (Currently amended) The collection according to any of claims 4-11, wherein eharacterized in that at least one of the solute S and its affinity counterpart AC_S, and/or at least one of the binder B and the ligand L comprise a structure selected from the group of amongst peptide structure consisting of including poly/oligo-peptide and protein structure, carbohydrate structure, lipid structure including steroid structure, nucleotide structure including nucleic acid structure, and polymeric structure.
- 13. (Currently amended) The collection according to any of claims 1–12, wherein characterized in that said solid phase is in a dry state, preferably comprising in addition to the solid phase one or more bed-preserving agents.
- 14. (Currently amended) The collection according to claim 13, whereineharacterized in that at least one of said one or more bed-preserving agents is a microcavity adherence agent.

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